

CHAPTER XI

The Engineer Soldier

The modifications and innovations introduced into the organization of engineer troop units in response to wartime strategy, to manpower and materials shortages, and to the idiosyncrasies of the three major commands had a parallel in the preparation of the engineer soldier for his job overseas. Before the North African landings, the training of the engineer soldier, like that of his officers, had been governed by the drive to fill new units. Both officers and trainees were expected to learn most of what they should know after assignment to a unit. Resumption of the twelve-week cycle at replacement training centers in the spring and summer of 1942 decreased the amount of training left to the unit. But even twelve weeks was scarcely long enough to turn out soldiers equipped with the skills prerequisite to team training unless large numbers of them coming to the Engineers had been skilled workers in civilian life.

The expectation that the draft would channel a superabundance of skilled men into the Army was one of the most serious miscalculations in the mobilization plans. If the United States had only been required to raise an Army there would indeed have been a superabundance of such men. If it had only been required to produce matériel for its own armed forces, there might have been enough men with such qualifications to go around. But even the most industrialized nation in the world found itself short of skills when, in addition to creating a huge

fighting force, it continued to man the arsenal of democracy.

It was the technical services whose plans were most upset by the failure to arrive at a more accurate estimate of the numbers of skilled men who would be drafted. The Infantry required only 164 occupational specialists per 1,000 enlisted men. In contrast, the requirements of the seven technical services ranged from the 409 per thousand needed by the Chemical Warfare Service to 788 per thousand needed by the Transportation Corps. The Corps of Engineers, needing 725 occupational specialists per thousand, was second only to the Transportation Corps in the number of skilled and semi-skilled men required.¹ At no time did the Engineers receive anything approaching the desired numbers. The corps of specialists had to be created. During the expansion before Pearl Harbor the enlisted men's courses at the Engineer School and the units themselves—the latter often with the help of trade schools near their posts—managed to produce enough bulldozer operators, carpenters, demolitions men, map makers, and other technicians. By the spring of 1942, however, the job had become too big for them to handle. From the fall of that year until the following summer the Engineer training program was dominated by the demand for specialists. By the summer of 1943

¹ Palmer, Wiley, and Keast, *Procurement and Training of Ground Combat Troops*, Table 1, 28 Jan 43, p. 8. See also above, pp. 116–17.

the crisis had passed, not only in regard to specialists but in regard to officers and non-specialists as well. From then on the Engineers were relatively free to develop the type of training program they had long hoped for, a program designed to turn out engineer soldiers who could fight, who possessed a well-rounded technical knowledge, and who, if they were supposed to perform a skilled job, could in fact do just that.

Training the Corps of Specialists

Late in the spring of 1942 the Engineers, at the behest of SOS, made an analysis of training needs for the remainder of the year. Adding to the troop basis those units almost certain to be approved for activation but excluding amphibious units and utilities detachments, the Troops Division calculated that 146,144 engineer soldiers would require training during the last nine months of 1942, this load to be distributed as follows:²

Engineer replacement training centers—	51,487
Replacement training centers of other services —————	39,052
Engineer School—————	9,562
Civilian trade schools—————	7,309
Schools of other services—————	1,505
Engineer units—————	37,229

The probable output of the ERTC's, after deductions for OCS and other special purposes, was 32,295 below what it should have been to insure this number. The Engineer School was under by about 3,000 and civilian trade schools then holding contracts with the Engineers by approximately 5,500. If training in signal communications was to be provided by the Signal Corps as the Engineers recommended, that service would have to enroll some 1,500 engineer soldiers. On 20 May 1942 Sturdevant asked SOS to authorize a third ERTC and make arrangements to increase the output of the

courses for enlisted men at the Engineer School, trade schools, and the Signal Corps Service School.

Sturdevant's plan for training specialists deviated little from the practice of the past year and a half. Specialist training would have been centered where it had always been, at the Engineer School. Specifically, Sturdevant sought to increase the school's output of draftsmen, surveyors, and other topographic specialists from 814 to 2,170 over the nine-month period and increase construction machinery operators from 282 to 1,073. The number of construction machinery operators to be trained at the school would represent but a fourth of the total required. They would be assigned to units to teach the others. ERTC's would conduct no specialist training; it would be their job to select those qualified to attend the schools.³

SOS's Training Division modified Sturdevant's plan drastically. It saw no need to establish another replacement training center. AGF was expected to transfer a large number of trainees to the technical services during 1942. Convinced that the Engineers had underestimated the number of skilled workers they would receive from the draft, SOS cut their estimate of training requirements. On the other hand, Sturdevant's idea of drawing upon facilities of the Signal Corps Service School and for increasing the kinds and amounts of training being conducted by civilian trade schools was encouraged. Noting that a number of the specialists required by the Quartermaster Corps, the Signal Corps, and the Corps of Engineers were the same, SOS established

² Memo, ACofEngrs (Sturdevant) for Dir Tng SOS, 20 May 42, sub: Analysis of Engr Tng, with Incls 1-7. 353, Pt. 18.

³ *Ibid.*

a co-operative system so that the three services pooled their resources. Each trained for all concerned the specialists in which that service had a primary interest. Under this arrangement the Quartermaster Corps would assume the training of ten types of specialists which the Engineers had been sending to civilian schools and the Signal Corps would produce the communications experts already listed by Sturdevant. SOS authorized the Engineers to contract with trade schools for the training of topographic instrument repairmen, powerhouse engineers, electricians, electric motor repairmen, and tractor mechanics.

At this point agreement upon the facilities for training engineer specialists ceased altogether. By the spring of 1942 the Engineer School had stretched its space to the utmost to take care of the growing roster of officer candidates. The War Department scrutinized all requests for new construction with an eye to cutting down on nonessentials. SOS accordingly ruled that the capacity of the enlisted men's courses at the school was not to be augmented by any significant amount. Instead, preparation should be made to take care of no more than 200 additional students in courses already being offered. Civilian schools should train draftsmen, surveyors, and geodetic computers. To meet the large and all-important requirement for construction machinery operators, SOS suggested that the Engineers look to the ERTC's.⁴

Although from the beginning some enlisted men had been sent to schools directly from the ERTC's and some few specialists had been trained at the ERTC's themselves, the main job of the Belvoir and Wood centers during the first year of their existence had been to feed basically trained engineer soldiers into units. Emergency arrangements

for the production of specialists in the summer of 1942 did not subtract at all from this responsibility. The change appeared to be a simple one, involving only a shift in the immediate destination of the product. Instead of going directly to units, a good proportion of the men would henceforth be siphoned off to learn a trade at service or civilian schools or at the ERTC's themselves. But the lack of time complicated the program. No sooner had the ERTC's overcome an emergency demand for the basically trained soldier than they were faced with an emergency demand for specialists. They satisfied the new demand in the same way they had the earlier one, by cutting out some training.

The new program was introduced just at the time the ERTC's were changing back from the eight-week to the twelve-week basic training cycle. The longer cycle produced a more satisfactory filler but reduced the number of men available for specialist schooling. The Belvoir center in early July 1942 worked out a compromise plan to produce both qualified fillers and quantities of men suitable for more individual instruction. Under this plan, which went into operation at both Belvoir and Wood in August, there were two types of battalions, one for general replacements on a twelve-week schedule and one which trained potential specialists for only five weeks. The centers classified and separated the men upon arrival on the basis of their qualification cards. The men who appeared best qualified by intelligence and background went to the specialist candidate battalions for the shorter course which consisted of four weeks of basic military subjects and one week of technical Engineer subjects. At the end of the five weeks, special-

⁴ Memo, Deputy Dir Tng SOS for CofEngrs, 13 Jun 42, sub: Engr Spec Tng. 353, Pt. 18.

ist candidates were then assigned to specialist schools, or if selected for OCS or rejected for specialist training were transferred to a regular battalion. The schedule for both types of battalions coincided through the first five weeks to facilitate such transfers. By converting two white battalions and one half of one Negro battalion to the five-week program each center could furnish 780 white and 430 Negro specialist candidates each month. This output would more than fill the quota of 6,181 students for service and civilian schools through December.

Under the pooling of school facilities established by SOS, about 3,000 of these men would attend Quartermaster Corps schools to learn welding, automotive repair, and other mechanical trades. Signal Corps schools would produce about 300 telephone linemen, radio operators, and repairmen. The 3,000 potential construction machinery operators, tractor mechanics, surveyors, draftsmen, aerial phototopographers, and electricians—specialists in whom the Engineers had a primary interest—were to be dispersed to the Engineer School, to civilian institutions, and to the ERTC's own specialist courses.⁵

On 4 August Col. Joseph S. Gorlinski, chief of O&T, set forth in some detail the arrangements for handling this dispersion. The Engineer School would drop all courses in drafting, surveying, and topographic computing. A college or trade school would take on this work. The Engineer School could then enroll more men in the map reproduction, aerial phototopography, and water purification courses, which would then take up over two thirds of its capacity of 452 enlisted students. The assignment of construction machinery operators to the ERTC's for training made room at the

school for 120 more students. O&T decided to devote this capacity to a special twelve-week construction machinery course which would satisfy the engineer aviation battalions' need for versatile, highly skilled operators and maintenance men."

By the end of September 1942 the Engineer School had made the basic readjustments to carry out the new plan. Early that month O&T signed a contract with the University of Kentucky to give courses of three months each in general and topographic drafting, surveying, and geodetic computing to white enlisted men, the first classes to enter on 21 September with others following at weekly intervals to fill the authorized capacity of 870 students. The following month the Engineers made similar arrangements to train Negro enlisted men at the Virginia State College for Negroes, classes to begin in mid-November. From their opening dates until September 1943 when the contracts were terminated, the University of Kentucky trained 2,985, and the Virginia State College for Negroes 440 topographic specialists. Meanwhile the Engineers hastened to enlist the aid of trade schools and factories. Between June and December 1942 they made arrangements with the Radio-Television Institute to train electricians, with the Evinrude Motor Company to give instruction in the operation

⁵ (1) 1st Ind, CG ERTC Belvoir to CG Ft. Belvoir, 9 Jul 42, 2d Ind, CG Ft. Belvoir to CofEngrs, 10 Jul 42, 4th Ind, Dir Tng SOS to CofEngrs, 2 Aug 42, on Ltr, Actg C of O&T Br to CG ERTC Belvoir, 30 Jun 42, sub: Spec Rqmts. 353, ERTC Belvoir, Pt. 1. (2) Ltr, C of O&T Br to CG ERTC Wood, 29 Aug 42, sub: Tng Program, with 1st Ind, 7 Sep 42. Wood, 353.01, Tng Schedules. (3) Memo, AC of O&T Br to Gorlinski, 20 Jul 42, sub: Engr Spec Tng. 353, Pt. 18.

⁶ The discussion of the enlisted men's courses at the Engineer School is based upon Clinard and McCune, Engineer Enlisted Specialists.



TRACTOR-OPERATED LETOURNEAU CRANE M20 *used by engineers to unload pierced steel plank at an airfield in North Africa, January 1943.*

and repair of outboard motors, with General Motors Corporation to train diesel mechanics, and with the manufacturers of gas and electric generators to teach the operation and maintenance of this equipment. The Engineers looked to the Caterpillar Tractor Company and to R. G. LeTourneau, their prime contractors for construction machinery, to supplement the elementary schooling given by the ERTC's. By using the facilities of these manufacturers the numbers of highly skilled operators and maintenance men required by SOS and AGF units could be supplied. Caterpillar and LeTourneau would do for these services

what the Engineer School was doing for the Air Forces.

The new plan for the training of engineer specialists was barely under way before it had to be modified. The Army Air Forces expanded at a more rapid rate than had been estimated the previous summer and its training program had to be enlarged. Beginning in December 1942 aviation engineers would be trained in replacement centers operated by the Air Forces. Potential aviation engineer specialists would still be sent to the Engineers for schooling. Under the accelerated program the Engineers would have to furnish 700 specialists each

month to the AAF, of whom 264 would be construction machinery operators. Since the first reduction in the capacity of OCS had made room for more men at the Engineer School, O&T decided to concentrate specialist training for the AAF at the school. But training time had to be cut from twelve to four weeks. Instead of turning out a worker who was familiar with all the machinery used in the construction of airfields as had been contemplated under the twelve-week course for aviation engineers, the four-week course turned out a worker familiar with only one type. The graduate of the school's mechanical equipment course for aviation engineers was no more versatile than the graduate of the mechanical equipment courses given at ERTC's. Those highly skilled men needed by engineer aviation battalions were trained at Caterpillar and Le-Tourneau along with those destined for SOS and AGF engineer units. Room was also made at the Engineer School to admit AAF trainees in map reproduction, water purification, and camouflage. By December the school's capacity was almost double that of the previous September: ⁷

Total	890
Phototopography	130
Map reproduction.....	160
Water purification.....	200
Camouflage	100
Mechanical equipment, aviation.....	300

To satisfy the demand for other specialists required by AAF, the University of Kentucky enrolled additional students in its surveying and topographic computing courses and contracts were executed with the Franklin Technical Institute of Boston and the Metropolitan Technical School of New York for the training of draftsmen and electricians, respectively.

The Engineers expected the quality of specialist candidates sent from ERTC's to be superior to those chosen by unit commanders, who were reluctant to separate many of their best men from their organizations. The qualifications for the different courses varied. Candidates for the phototopography courses were to be high school graduates, preferably with a knowledge of trigonometry and drafting; candidates for the aviation engineer equipment course were to be quick at arithmetic and the use of formulae, with aptitude for, or experience in, electrical and mechanical work. AGCT scores between 90 and 100 and in certain courses Mechanical Aptitude Test scores of not less than 100 were prerequisites. Lacking control over the qualifications of men sent to the Engineers from reception centers and under pressure to fill quotas, the ERTC's found themselves in an impossible position. From the Enlisted Specialists Branch at the University of Kentucky came complaints that half its students had less than the minimum amount of education required. The Army Air Forces confessed it could not fill quotas unless it lowered standards. SOS directed the Engineers to allow all but "obvious misfits" to complete the aviation engineer equipment course, although they need not be graduated. In March 1943 the qualifications for enrollment were revised downward to fit more nearly the qualifications of candidates being received. A high school diploma, the commandant of the Engineer School insisted, was more important to the topographical specialist than was his AGCT score which could be as low as 90 for some courses.

⁷ Ltr, Comdt Engr Sch to O&T Br, 2 Nov 42, sub: Proposed Increases in Off Courses and Enl Spec Courses, Engr Sch, with 2d Ind, 16 Nov 42. 352.11, Engr Sch.

Candidates in the mechanical equipment course could score as low as 85 on the AGCT and 90 on the Mechanical Aptitude Test. They should have some knowledge of arithmetic. Previous experience with machinery was essential.

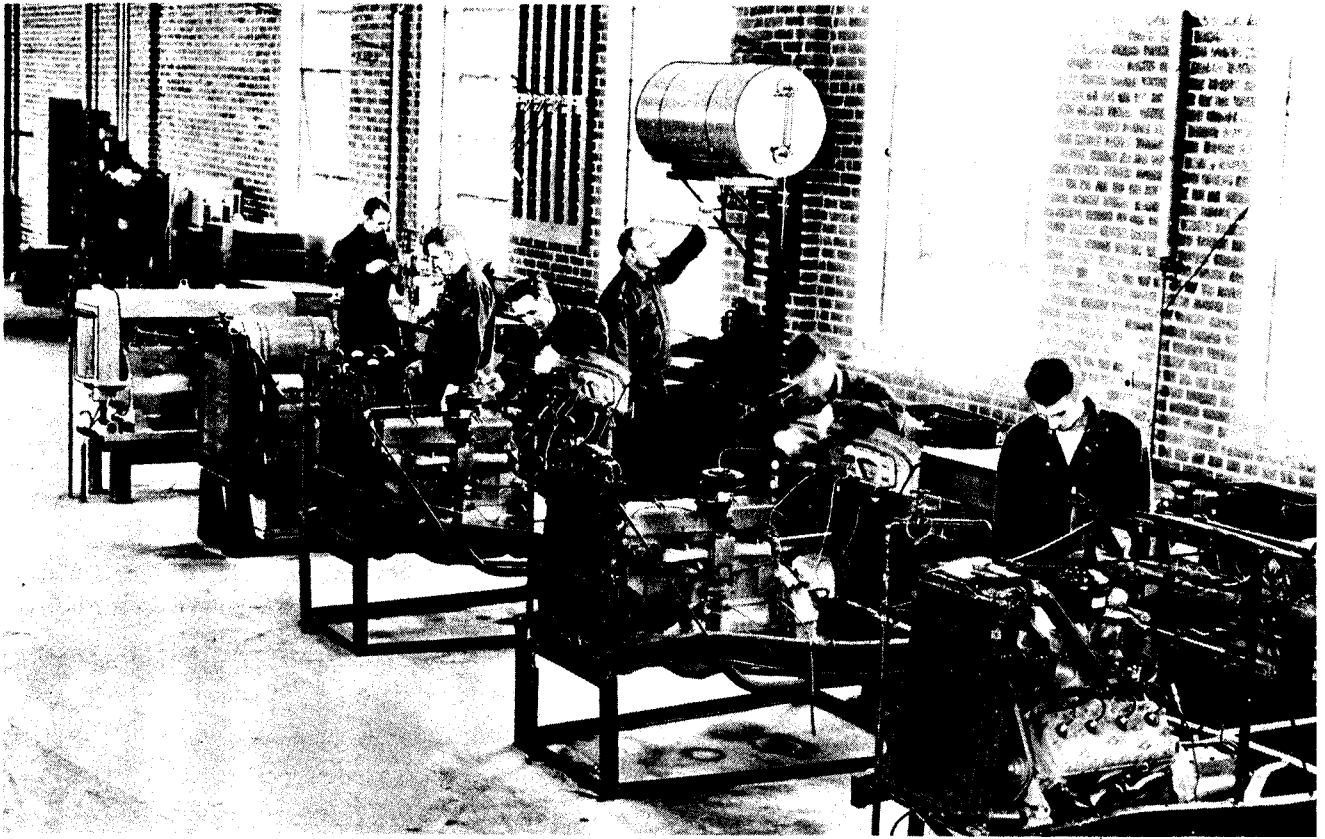
The entire output of the five-week battalions at the ERTC's was at first channeled into service and civilian schools. Men destined for specialist training at the ERTC's—would-be construction machinery operators, carpenters, demolitions men, truck drivers, buglers, messengers, clerks, typists, mess sergeants, cooks, and bakers—had to be drawn from the regular twelve-week battalions.⁸ OCE furnished quotas for each of these ERTC courses according to current estimated needs. The ERTC's selected men to fill these quotas on the basis of civilian experience, interest, and capability. Some directly allied civilian occupations fitted reasonably well into the system, but for the most part the men had to be trained completely at the center. As a consequence, native ability and interest were the qualifications most often sought. Since the jobs to be learned were all simple, none requiring an AGCT score above Class III, sufficient numbers were in most cases available. The Wood center in November 1942 reported 10 percent more men suitable for this instruction by AGCT scores than it could use. Lack of interest accounted for much of the difficulty in obtaining cooks, in spite of the low requirements for this course. The danger involved in demolition work made this one of the hardest of the courses to fill at Belvoir, but the Wood center received enough men with mining experience to meet its quota. Quotas for construction machinery operators, the group of specialists most vital to the success of the engineer mission, were the hardest to fill. In the first

place the quotas were much larger for this course than for any other. Perhaps more important, some familiarity with power machinery was almost mandatory for its successful completion. The high ratio of failures among this group of specialist candidates at Wood was attributed to the large number of trainees who saw such machines for the first time at the centers. Few men with civilian experience in construction work reached the replacement centers. They went instead directly from the reception centers to fill general service or special service regiments.⁹

Each center developed its own organization for specialist instruction. At Belvoir, one company from each of the seven regular battalions became a specialist company. After seven weeks of regular training, the selected men transferred to the specialist company for the remaining five weeks. In September the officer refresher, railway officer, pre-OCS, special development, and specialist programs at Wood were placed in a special training group under a single administrative head. The specialists remained in their original battalions for housing but for administrative and training purposes were considered a part of this group after the first seven weeks. There was a further centralization in December. After that time all ERTC-trained specialists transferred physically to one battalion once the seven

⁸ Unless otherwise cited, the remainder of this section on specialist training is based upon: (1) 353, Engr Specs, Pt. 1; (2) 353, ASFTC Wood, 7-12-41-1-3-46; (3) Belvoir, 353, Tng, 1941-42; (4) Wood, 353.01, Tng Schedules.

⁹ (1) Ltr, Asst Adj Belvoir to CofEngrs, 21 Dec 42, sub: Qualifications of Specs, with Incl 1, List of Spec Schs in Order of Difficulty of Mtg Rqmts With Well-Qualified Trainees. P&T Div file, Ft. Belvoir ASFTC. (2) Memo, Dir Pers Div ERTC Wood for Col Edward H. Coe, 29 Dec 42, with Incls. 320.2, ASFTC Wood.



CLASS IN AUTOMOTIVE MECHANICS at the *Enlisted Specialists School, Ft. Belvoir, Va.*

weeks of basic and general technical training were completed. The special training group as a separate administrative unit was discontinued in February 1943, but the specialist battalion setup lasted until the following October.¹⁰

Instruction in each specialty was a combination of theory and practice but with much the greater amount of time being spent in practical work. Demolitions men learned the skills necessary to crater roads, demolish highway bridges, destroy railroad rails, bridges, and rolling stock, and cripple water and power plants. Carpenters learned to build several types of structures using both wood and concrete. The centers managed to give the specialists practical experience and at the same time benefit their

own plants. Carpenters added classroom buildings. Machine operators built roads, excavated swimming pools, and prepared terrain for firing ranges.¹¹

The general step-up in the production of ERTC specialists after August 1942 entailed additional equipment. But the shortage of construction machinery which pre-

¹⁰ (1) Ltr, CO ERTC Wood to CofEngrs, 10 Sep 42, sub: Orgn of Spec Tng Group. Wood, 353, Tng (Special Tng). (2) Tng of Repls, Annex II, and Exhibits 1 to 13, Chart 3, 6 Aug 43.

¹¹ (1) Specialist Lesson Outlines, ERTC, Ft. Belvoir, Va., Jan 43. (2) 2d Ind, ERTC Wood to CG Seventh SvC, 7 Dec 43, on Ltr, Col John T. Minton to CG Seventh SvC, 2 Dec 43, sub: Tng Inspec, ERTC, Ft. Leonard Wood, Mo. Wood, 333.1, Inspec Rpts by Visiting Offs. (3) *Belvoir Castle*, 18 Feb 44.

vailed during 1942 dictated that all available standard models be sent overseas. In order to have any at all, the centers had to be content with a variety of used nonstandard types, and even these were scarce for months after the courses began. The total additional equipment authorized for each ERTC, as the result of lists submitted in August, included 21 air compressors, 31 bulldozers, 2 ditching machines, 2 earth augers, 2 road rollers, 1 grader, 4 shovels, 3 cranes, 1 concrete mixer, and 20 bugles. By 5 October Wood had received 20 bugles. Small amounts of more useful equipment began to arrive, however, at the end of that month. Yet as late as February 1943 Belvoir still had less than its authorized amount of machinery. By this time, furthermore, there was an additional complication. A new ERTC was being built in Oregon with an opening date in May. Everything that could be obtained on the low training priority during the spring of that year was earmarked for the new center.¹²

Other portions of the specialist program faced similar difficulties. The courses in driver instruction were so restricted by a shortage of trucks and motorcycles through 1942 that the burden of this training was in effect returned to the units, with higher maintenance costs as a result.¹³ Task force requirements, production levels, priorities, and other training needs went a long way to explain and excuse the presence of substandard equipment in 1942 and early 1943. But in the eyes of many this was false economy. "When we got the good equipment," wrote the commander of the 41st Division from New Guinea in the summer of 1943, "we were very apt to ruin it because our operators were not trained on it. They

must be trained in the equipment they are to use in the field."¹⁴ Many never were.

The specialist program precipitated reorganizations and brought on equipment crises, and was also the deciding factor in renewed demands from the centers for larger training and administrative staffs. The Wood center had increased its capacity from 8,800 to 9,760 trainees on 1 February 1942 by emergency crowding. Proportional cadre had not been granted because the measure was intended to last only until the new ERTC could be built. Belvoir shifted to the same basis on 27 September, absorbing the increase into the established training battalions. Mainly at the insistence of Belvoir, the officer complement for the centers had been revised upwards from 341 to 375 by June 1942, but the enlisted allowance remained at the previous December level of 1,640. In September 1942 both centers insisted upon a revision. The Wood center by that time realized that the plans for the new ERTC did not include any reduction in trainee capacity at the existing centers, that the temporary enlarged capacity was in effect permanent. The specialist program increased the pressure. By early October both

¹² (1) Ltr, AC of O&T Br to C of Sup Div, 1 Sep 42, sub: Equip for ERTCs. 475, ASFTC Belvoir. (2) Ltr, CO ERTC Wood to CofEngrs, 5 Oct 42, sub: Increase of T/BA, with 1st Ind, 17 Oct 42. 475, ASFTC Wood. (3) Ltr, ExO ERTC Belvoir to CofEngrs, 18 Feb 43, sub: Status of Equip, with 2d Ind, C of O&T Br to CG ERTC Belvoir, 1 Mar 43. 475, ASFTC Belvoir.

¹³ Ltr, AC of O&T Br to C Allowance Br SOS, 12 Dec 42, sub: T/A 5-1: Prospective Change in Ord Motor Transport Equip, with 2d Ind, Dir Rqmts Div SOS to CofEngrs, 13 Jan 43. 400.43, Pt. 45.

¹⁴ Trudeau file, General Ogden.



ENGINEER EQUIPMENT IN NEW GUINEA, *February 1943. Sheepfoot roller (left) and road grader used by 43d Engineers to build an airstrip near Dobodura.*

centers had been granted an additional 75 enlisted men and in December SOS approved an allotment of 380 officers and 1,715 men.¹⁵

An added complication to the ERTC specialist program was the rigid specification by ASF of the content, length, and sequence of training in several of the courses. In the interest of standardization of courses for cooks, clerks, automotive mechanics, and motor vehicle operators which were given at all ASF replacement centers, the ASF Training Division in March 1943 issued individual eight-week schedules to be followed without modification. The full eight weeks for the ASF courses had to be given even if the centers had to use processing time or curtail basic training. No omissions or substitutions could be made in these

ASF courses, contrary to the policy with regard to those prescribed by OCE, which

¹⁵ (1) Ltr, Asst Corps Area IG to CG Third Corps Area, 13 Dec 41, sub: Ann Gen Inspec, Station Complement and ERTC, Ft. Belvoir. Belvoir, 333.1, Investigations and Inspecs, 1941-42. (2) Office Memo, AC of O&T Br for Col Garlington, 3 Mar 42, sub: T/Os ERTCs. 320.2, RTCs (C). (3) T/O 5-510, ERTC (Consolidated), 16 Jun 42. 320.2, RTCs, Pt. 1. (4) Ltr, C of O&T Br to CG SOS, 2 Sep 42, sub: Increase in Allot of Pers, ERTC, Ft. Leonard Wood. 320.22, ASFTC Wood. (5) Ltr, Actg C of O&T Br to CG SOS, 12 Sep 42, sub: Increase in Allot of Pers, ERTC, Ft. Belvoir. 320.2, ERTC Belvoir, Pt. 1. (6) Ltr, AGO to CG ERTC Belvoir, 5 Oct 42, sub: Allot of Grades and Authorized Strength. Same file. (7) Ltr, AGO to CG ERTC Wood, 17 Sep 42, sub: Allot of Grades and Authorized Strength. 320.22, ASFTC Wood. (8) 1st Ind, 16 Dec 42, on Ltr, Asst QMG to O&T Br, 14 Dec 42, sub: Rqmts for ERTCs. 320.2, ERTCs, Pt. 1. (9) Memo, AC of O&T Br for Tng Div SOS, 2 Jan 43, sub: Pers for New ERTC, Camp Abbot (Bend). 320.2, ERTC Abbot.

were left flexible enough to allow for local differences and training emergencies.¹⁶

In spite of shortages of instructors and equipment, the centers did turn out the required specialists, whether fully qualified for their positions or not. Between June 1942 and June 1943, the two centers produced 14,409 specialists from a total of 82,301 men received, or 17.5 percent of the whole. Of these 14,409 specialists, 10,486 were white, constituting 17.83 percent of the total white trainees. Of the 23,500 Negroes received, 3,923 or 16.69 percent became specialists. Many more Negroes were selected for training in the elementary courses given in the ERTC's than for the more advanced specialist training at service and trade schools. Of the 15,876 men selected to attend schools, 14,685 were white and only 1,191 were Negro.¹⁷ By May 1943, the program of specialist training at the centers had settled sufficiently so that O&T could predict the combined annual output of Belvoir, Wood, and the new center at Camp Abbot, Oregon:¹⁸

Total	14, 182
Heavy equipment operator.....	5, 032
Chauffeur and driver.....	1, 980
Carpenter	1, 895
Cook	1, 850
Demolition man.....	1, 351
Clerk and typist.....	1, 221
Mess sergeant.....	296
Half-track driver.....	278
Bugler and messenger.....	222
Sign painter.....	37
Mechanic, maintenance.....	20

While the ERTC specialist courses were gradually being straightened out, the other part of engineer specialist training which affected the centers, the production of men qualified for more advanced training in schools, ran into difficulties of its own. Be-

cause of insufficient co-ordination between the times the five-week specialist candidate battalions emptied and the opening dates of specialist courses at the schools, there was alternately a piling up of men for whom no school assignments existed and then openings in schools when there were no five-week battalions scheduled for completion. Though each center had only two and one-half battalions on this shorter program, the more rapid rate at which they completed training resulted in their turning out more than one third of all the trainees passing through the ERTC's. The already closely packed centers had no place to house such large numbers. Each battalion had to be cleared to make room for the next contingent which pressed close behind.

Since these men ranked second only to officer candidates in intelligence and aptitude, it was important that they be conserved and advantageously placed. The obvious answer was a pooling arrangement to store them for short intervals until they could enter the schools. During September 1942 the need for such a regulatory pool was particularly acute. OCE made arrangements with the Engineer Unit Training Center at Camp Claiborne, Louisiana, to take these surplus men into units there until

¹⁶ (1) MTP 5-2, 4 May 43. (2) Ltr, Actg C of O&T Br to CG ERTC Belvoir, 18 Mar 43, sub: MTP 5-2. 353.01, ETC Belvoir, 18 Mar 43-20 Aug 46. (3) Ltr, Adj ERTC Wood to CofEngrs, 15 Dec 42, sub: Request for Approval of Spec Tng Program, with 1st Ind, 8 Jan 43. Wood, 352, Schs (Gen).

¹⁷ (1) 2d Ind, ERTC Belvoir to CofEngrs, 17 Dec 42, on Ltr, O&T Br to CG ERTC Belvoir, 5 Dec 42, sub: Rpt on Trainees Received at ERTCs. 353, ERTC Belvoir. (2) Ltr, Asst Adj ERTC Belvoir to CofEngrs, 5 Jan 43, same sub. 353, ASFTC Belvoir, Pt. 2.

¹⁸ Memo, AC of O&T Br for CG ASF, 21 May 43, sub: Rqmts for Sch Trained Specs, with Incl. P&T Div file, Engr Spec Tng.

they could be recalled to schools. If not recalled within designated times they were to be incorporated into units.¹⁹ This plan might have worked had the total number of men produced by the five-week battalions coincided with the total capacities of the schools, but by October the centers were delivering more than the 700 to 800 which the schools could absorb each month. These excess men had to be assigned to units as general replacements after only five weeks of training, not only wasting their potential skills but handicapping them as well with inadequate tactical and technical instruction. By early November 1942 more than 40 percent of the specialist candidates were going to units, not schools.

Dissatisfied with this obvious misuse of manpower, SOS called for a decrease in the output from the five-week battalions or an increase in the capacities of the schools. The latter was not feasible. On the other hand, to equalize the capacities of the five-week battalions with those of the schools would waste considerable space at the centers. In mid-November, Belvoir evolved a system which was adopted immediately at Wood. The five-week battalions continued to produce as many men as before, but one company from each of these battalions shifted to ERTC specialist training after five weeks. This plan provided a better qualified group for the center specialist courses, which ran through the full twelve weeks, and made much better use of engineer manpower. Fewer men were then selected from the twelve-week battalions for the center specialist courses. The remaining three companies in the five-week battalions normally furnished enough men to fill school quotas. When they could not, fewer men were transferred to the ERTC specialist program

which then selected more men from the regular battalions.

Replacement requirements were such in November 1942 that the 8,800-man annual loss in output under this plan was no serious matter. When requirements were reviewed once more in the spring of 1943, the maximum output of both general replacements and specialists which had been imposed by the 1942 troop basis no longer seemed necessary. Mobilization had stabilized. O&T thereupon recommended that the five-week battalions be discontinued altogether. The shift promised to be advantageous in a number of ways. All trainees, including specialists, would have twelve weeks of ERTC training before transfer, five weeks of basic training and seven weeks of tactical and technical work. All trainees at the end of that time would be qualified as general replacements if the quotas for school-trained specialists were further reduced. Since no transfer would be necessary from one battalion to another as the school quotas changed, the administrative load would be decreased. Specialists would enter the ERTC courses after the fifth week. ASF approved this plan at the end of March, with the stipulation that for those trainees taking the four ASF-standardized specialist courses the division of time must be four weeks and eight weeks, since for those courses eight weeks had been prescribed.²⁰ In formulating these plans, G-1 failed to

¹⁹ (1) Ltr, AC of O&T Br to CG EUTC Claiborne, 22 Sep 42, sub: Engr Spec Tng. 220.3, ASFTC Claiborne. (2) 2d Ind, C of O&T Br to CG SOS, 12 Jan 43, on Ltr, CG ERTC Belvoir to CofEngrs, 22 Dec 42, sub: Proposed Table of Pers. 320.2, ASFTC Belvoir.

²⁰ Ltr, C of O&T Br to Dir Tng SOS, 2 Mar 43, sub: ERTC Program for 1943, with 1st Ind, 25 Mar 43, 2d Ind, 29 Mar 43, and 3d Ind, 30 Mar 43. 353.01, ERTC, Pt. 1.

anticipate the increase in replacement needs that accompanied the climax of the Allied campaign in North Africa in the spring of 1943. Once again the centers and schools had to concentrate on a maximum output. The lengthened program for school specialists had to be postponed for several months. Belvoir and Wood operated above capacity to furnish the men needed, since the new center in Oregon was not completed until May.²¹

Even so, from May to early July 1943 both Belvoir and Wood found it hard at times to meet the school quotas. It was not only a matter of numbers, but also the quality of men received and priorities given to other training. The plan worked out by Belvoir in November 1942 had provided for the use of all the men in the five-week battalions as specialists, trained either at the ERTC's or at outside schools. By this time, the ERTC courses had established a priority claim upon these men because construction machinery operators were more desperately needed than any other group. Quotas for school training had to be met from those remaining after the ERTC courses were filled. This situation was coupled with Army Specialized Training Program withdrawals and OCS selections, and aggravated by large numbers of men who, although assigned to the five-week battalions, were not qualified for schools because of low AGCT scores, poor attitude, age, or physical condition. Out of 2,027 men in the five-week battalions at Belvoir in mid-July, 1,241 were either not qualified or not available for specialist training at the center or at schools.²²

The expanded specialist program, combined with numerous extra training responsibilities and the increased demands for men for other purposes, pushed the training of

regular replacements into a relatively minor position despite the efforts of OCE and the centers themselves to co-ordinate and improve the quality of this instruction. By November 1942 Col. Frank S. Besson, Sr., the commanding officer of the Wood center, had come to the conclusion that the training of the nonspecialized replacement was completely disrupted. He recommended abolishing both the five- and twelve-week programs and suggested a substitute uniform period of only seven weeks for all. Seven weeks represented the extent of actual uninterrupted training at his center. About one third of the men were in the five-week battalions which did not pretend to give adequate basic instruction. In the twelve-week battalions, the transfer of OCS candidates, the attendance of ERTC specialists at schools, and frequent calls for shipments to units so depleted their ranks that in the last few weeks there were often not enough men left both for guard duty and for all of the scheduled training. Such depletions wasted space, facilities, and instructors' time. Since the length of stay of any given group of trainees could not be predicted, a balanced schedule could not be drawn up to fit the amount of time available. The trainee simply had the latter part of his training cut short. Not until August 1943 could the cen-

²¹ (1) Ltr, Asst Ground Adj Hq AGF to CofEngrs, 8 May 43, sub: Increase in Capacity of Spec Schs for AGF Engr Units. 220.63, Special Sv Schs. (2) Memo, Actg C of O&T Br for CG ASF, 8 May 43, sub: Output of ERTC's. 320.22, ERTC, Pt. 1. (3) Memo, Lt Col J. D. Strong for Dir Mil Tng ASF, 21 Jun 43, sub: Inspec of ERTC, Ft. Leonard Wood. 333.1, ASFTC Wood.

²² (1) Ltr, Asst Ground Adj Hq AGF to CofEngrs, 8 May 43, sub: Increase in Capacity of Spec Schs for AGF Engr Units. 220.63, Special Sv Schs. (2) Ltr, Asst Adj ERTC Belvoir to CofEngrs, 14 Jul 43, sub: Spec Schs, with 1st Ind, AC of O&T Br to CG ASF, 17 Jul 43. P&T Div file, Engr Spec Tng.

ters abolish the five-week battalions and give a longer uniform period of training to all replacements.

Reflections From Battle

While dissatisfaction on the home front played a part in bringing about changes in the training of the engineer soldier, the ultimate test was the battle.²³ Reports from North Africa were full of praise for the engineer soldier when he was called upon to perform such strictly engineering activities as road building and bridging. In their particular specialties the engineer replacements were on the whole well trained. As combat troops they were as unprepared for their role as the men from other services. The reports from the North African campaign criticized the unreal quality of training, the lack of hatred for the enemy, the sense of playing a game on a vast scale. As one private expressed his angry contempt for this attitude: "I know so well those men who were cut to ribbons at the KASSERINE PASS, and I know why they were thrown into confusion, panicked by attacks, and accepted their fate almost paralyzed. When they jumped into foxholes to let the tanks roll over them, and were bayoneted in these foxholes by the Infantry that came behind the tanks, they died with an astonished look on their faces, as if they wanted to ask: 'Could that be possible, would they really do that?'"²⁴

Discipline in the early stages of the invasion was poor. Souvenir hunting led to casualties from booby traps. First aid instruction proved inadequate. The use of camouflage was apparently understood, but rarely employed. Foxholes were not dug deep enough to provide adequate protection. Units did not disperse widely enough

from road convoys to avoid strafing from planes. Members of many weapons teams could fill only one position; one casualty could incapacitate an entire crew. Observers recommended training with live ammunition and real mines, more night work and extended field operations during bad weather under conditions of extreme fatigue, with subsistence for long periods on field rations. The use of engineers as infantry pointed up the need for tanks in tactical training, and for a broader program of instruction in machine gun fire in support of engineer combat missions. Engineer combat battalions had little straight engineering duty in North Africa, except mine laying and removal. A detailed knowledge of mines and mine detectors was imperative.²⁵

The ERTC's had been contending for months against restrictions which prevented them from exposing trainees to anything ap-

²³ With the exception of those files noted separately, this section and the one immediately following are based upon: (1) 353, ERTCs, Pt. 1; (2) 353, ETC Belvoir, Pt. 2; (3) Belvoir, 353, Tng, 1943; (4) Wood, 353, Tng; (5) 353.01, ETC Belvoir, 1943-46; (6) 322, ASFTC Abbot; (7) 400.34, ERTC, Pt. 1; (8) Belvoir, 470, Ammunition, Armament, and Similar Stores, 1943.

²⁴ Pamphlet, Pvt Frank B. Sargeant, *The Most Common Shortcomings in the Training of Battalion and Regimental S-2 Personnel, and Some Suggestions to Overcome These* (Washington, 1943), p. 17. Ft. Lewis, 353, *Illumination, Irregularities, and Dim-Out Inspects* (Separate File).

²⁵ (1) Ltr, C of O&T Br to CGs ERTCs, 24 Feb 43, sub: Notes on Recent Fighting in Tunisia. 353, ASFTC Belvoir, Pt. 2. (2) "Errors in Africa to Bring Changes in Training Here," *Fort Wood News* [late March or early April 1943]. Wood, *Fort Wood News Clippings*. (3) Ltr, Asst G-3 Engr Amph Comd to CG Engr Amph Comd, 14 Apr 43, sub: Obsvns on Tng of Trps in the Fld in Tunisia. EAC, 370.2, North Africa (S). (4) Ltr, OCofOrd to All Mil Estabs Ninth SvC, 12 Jul 43, sub: Unit and Individual Tng. Lewis, 353, Tng, 17 Jun 43-31 Oct 43. (5) Ltr, C Engr AFHQ to CofEngrs, 19 Jul 43, sub: U. S. Engrs in the Tunisian Campaign. Intel file, Engr Sch, Doc 1547, U. S. Engrs in the Tunisian Campaign (S).

proaching the feel of battle. Instead of live ammunition, the centers had to use fire-crackers to simulate everything from small arms fire and supporting weapons to mine charges and booby traps. The trainees, hearing only the report of a cap when a "mine" exploded were not unduly impressed. Struck by this fact, the cadre at Belvoir had, as early as July 1942, asked for one antitank mine for every 150 men for demonstration purposes. Despite the fact that only cadres were to handle the live mines—and log mats would cover them—SOS ruled against their issue on the grounds that the demonstration was too dangerous.²⁶

By spring 1943 the experience gained in Tunisia began to be reflected in the training of engineer replacements. In April ASF directed that every trainee must "so far as practicable . . . be subjected during training to every sight, sound, and sensation of battle." He must be prepared mentally to perform his duties "regardless of noise, confusion, and surprise."²⁷ Combat training, as interpreted by O&T, was to duplicate battle conditions just short of causing casualties. Allowances of explosives, detonating cord, firing devices, mine detectors, smoke and tear gas pots, gas alarms, and blank ammunition were revised upward. By the end of the summer Belvoir and Wood received sufficient quantities to conduct the required training.²⁸

In infiltration courses the men crept over rough ground with full field equipment, subjected to the constant chatter of machine guns and the intermittent jarring of explosives. Tear gas, smoke, and still more explosives accompanied assault problems. Small villages were built in which to train the men in house-to-house fighting, routing snipers from roofs and attics and machine gunners from street barricades. Booby traps exploded when doors were opened or unat-

tached articles touched, detonations simulating mortar and artillery fire shook the surrounding area. One of the trainees at Belvoir expressed the desired result when he exclaimed after a particularly rough day on these "diabolical" courses, "Nothing can scare us now, we hope!"²⁹ Such training did not always stop just short of casualties. Carelessness no longer produced a fire-cracker burn.

From battle zones came repeated demands for combat training with tanks. The centers were well aware of the value of tanks for combat training as well as for testing bridges and obstacles but the two or three allotted them through 1942 allowed too little instruction in antimechanized attack or combat principles. Accordingly, on 24 June 1943, OCE requested four light and four medium tanks for each center. This allowance enabled the centers to include tactical problems against and in support of actual tanks in combat training. The techniques of hasty defenses could be made more realistic, with the tanks rolling over the trainees as they crouched in foxholes.³⁰

²⁶ Ltr, ExO ERTC Belvoir to CofEngrs, 27 Jul 42, sub: Antitank Mines, M-1, with 2d Ind, C of O&T Br to CG ERTC Belvoir, 3 Aug 42, with 3d Ind, CG ERTC Belvoir to CofEngrs, 7 Aug 42. 471, ASFTC Belvoir.

²⁷ AGO Memo S 350-26-43, 25 Apr 43, sub: Combat Tng, ASF.

²⁸ WD Cir 111, 29 Apr 43.

²⁹ *Belvoir Castle*, 11 Jan 43. For a fuller discussion of realism in training, see Palmer, Wiley, and Keast, *op. cit.*, pp. 387, 388.

³⁰ (1) Incl, Office Memo, Coe for Gorlinski, 11 Dec 42, sub: Supplement to Rpt on Tng Inspec of ERTC, Ft. Leonard Wood, to Office Memo, Gorlinski for Sturdevant, 12 Dec 42, sub: Inspec of ERTC, Ft. Leonard Wood. Wood, 333.1, Inspecs. (2) Ltr, CG Ft. Belvoir to CofEngrs, 14 Dec 42, sub: Request for Tanks. 470.8, ETC Belvoir. (3) Ltr, CO ERTC Wood to CofEngrs, 21 Dec 42, sub: Inspec of ERTC, Ft. Leonard Wood. 333.1, ASFTC Wood. (4) Interv, Col Paschal Strong, 28 Nov 52. (5) Info from Coe, 7 Jan 53.



DEACTIVATING ANTIPERSONNEL MINES AND BOOBY TRAPS, *by touch only, part of combat training for Engineers, Camp Abbot, Oreg.*

Physical hardening and marches were intensified. Additional obstacle courses were built and repeatedly run. At Belvoir, physical conditioning was combined with a practical application of rigging lessons in an additional knot obstacle course. Night operations were expanded to include five problems at Belvoir. The first one came in the second week and consisted of a cadre demonstration of night patrolling. In the fourth week, four platoons worked together on a night outpost problem. Four weeks later there was a night bridging operation, in total darkness, with maximum secrecy. A week later, the same type of operation followed in road building. In the last week or two of training there was a night reconnaissance trip which involved the use of a compass.³¹

New Proportions and Capacities

At the same time that the centers re-oriented instruction along more practical lines in the spring of 1943 their prime function changed from furnishing fillers for new units to replacing actual battle losses in existing ones. This functional shift began to be apparent by early spring and was one of the factors in promoting realism in training. Another aspect of this change was the dif-

³¹ (1) Memo, Lt Col C. D. Hill for Dir Tng SOS, 21 Oct 42, sub: Inspec of ERTC, Ft. Belvoir, Va. Belvoir, 333.1, Investigations and Inspecs, 1941-42. (2) Memo, C of RTC Br ASF for Dir Tng ASF, 8 Apr 43, sub: Inspec of ERTC, Ft. Belvoir, Va. 333.1, ERTC Belvoir. (3) Memo, Lt Col J. D. Strong for Dir Tng ASF, 21 Jun 43, sub: Inspec of ERTC, Ft. Leonard Wood, Mo. 333.1, ASFTC Wood.

ferent basis upon which the production of Negro and white trainees had to be calculated. Belvoir and Wood produced white and Negro engineers in a set proportion based upon the numbers needed for the new units, about three Negroes to every seven white trainees. The shift in emphasis to training replacements upset this balance. The demand for white replacements outran the numbers produced by this ratio, while the demand for Negro replacements was so small that too many Negro engineers resulted. By May 1943, this situation was chipping away at the efforts to improve training. White engineer replacements had to be supplied from the centers of other arms and services where they had received no engineer training. Surplus Negro engineers who had received this training were sent to other arms and services. OCE strongly recommended to ASF in May that the Negro and white capacities of the ERTC's be placed upon a basis directly proportional to Engineer loss requirements.³²

To reduce the proportion of Negro trainees at each Engineer center while keeping the same total capacities would have resulted in housing both white and Negro trainees in sections of each center which had been set apart for Negroes only. In early August OCE recommended a solution which would keep the races separated, provide equal facilities, and at the same time reduce the Negro output to conform to loss requirements. All Negro training at Belvoir would be discontinued. The three Negro battalions at Wood could furnish all the Negro engineers required. The decision to give all Negro training at Wood instead of at Belvoir was based upon the fact that Negro housing at Wood was more widely separated from that of the white trainees.

Recreational areas were comparable. No Negro trainees went to Belvoir after August 1943. As the Negro battalions there completed training under the twelve-week program over the course of the next few months, they were replaced by white battalions which began on a newly approved seven-teen-week program.³³

By July 1943 it seemed once more that Belvoir and Wood might be able to relax their efforts. Long-range estimates for the rest of 1943 and 1944 indicated that a lower output would be required since available manpower would be such that only replacements for existing units would be provided after August. The new ERTC at Camp Abbot, Oregon, had begun its first cycles and would relieve still more of the pressure from the other two centers.³⁴

Camp Abbot was located in the sparsely populated central part of Oregon in a region given to Indian reservations, bird sanctuaries, and national parks. It lay on the extreme northwest edge of a huge, high, relatively level bowl filled with extinct volcanoes, warm springs, and crater lakes. The site followed the course of the Deschutes River at an elevation of 4,000 feet, just a few miles east of the high peaks of the Cas-

³² (1) Memo, Asst CofEngrs for OSW, 30 Aug 43. 353, ASFTC Wood, 7-12-41-1-3-46. (2) Memo, Actg C of O&T Br for CG ASF, 8 May 43, sub: Output of ERTCs. 320.22, ERTC, Pt. 1.

³³ (1) Memo, C of O&T Br for CG ASF, 2 Aug 43, sub: Transition to 21-Wk Tng Cycle, ERTCs. 353.01, ERTC, Pt. 1. (2) Memo, McMath for Garlington, 2 Aug 43. Wood, 353.01, Scheds, Programs, and Directives. (3) Memo, C of O&T Br for CG ASF, 4 Aug 43, sub: Transition to 21-Wk Tng Cycle, ERTCs. 353.01, ERTC, Pt. 1.

³⁴ (1) Memo, G-3 for CGs ASF AGF, 7 Jul 43, sub: RTCs, with Incl, Readjusted Capacities of ASF RTCs—21-Wk Cycle. 320.2, RTCs (S). (2) Ltr, G-3 to CG ASF, 29 Jul 43, sub: Misasgmt of Specs. 220.63, Pt. 2. (3) Tng of Repls, Annex I. (4) Hq MDW, Notes on ASF Tng Conf, Camp Lee, Va., 20 Oct 43. EHD files.

cade mountains. It consisted of a natural open meadow of shallow volcanic soil, and a logged-over area of second-growth pine.³⁵

This site had definite advantages. Its western location cut down the time needed by personnel from that section of the country for furloughs and other processing. The eastern slope of the Cascade Range was cool and dry, without the sweltering summer heat of Belvoir and Wood. The installation was entirely new. There was no military post or camp at the site and none other than the center was established thereafter. In the year of Camp Abbot's existence, from May 1943 to June 1944, it had no other function than to serve as an Engineer center, with the same administrative personnel for both center and post. Full advantage could be taken of the mistakes made at Belvoir and Wood in the location and distribution of buildings and training areas without any concession to the needs of other training groups or post complement.³⁶

In spite of the obvious attractions and potential advantages of such a site, many of its drawbacks were apparent from the beginning. It was even more isolated than Wood. Although it was directly on the Oregon Trunk Line of the Great Northern Railroad, it was over 150 miles from any main east-west track and could not expect main line service. The few large cities of the state were over a hundred miles away, almost twice that distance around the mountains by rail. The nearest town, some eight miles away, had a population of only 10,000. Deschutes County, excluding its two small towns, had about two people for each square mile. Local sources for training supplies were practically nonexistent. Supplies and fuel had to be shipped in to the camp from a distance, at high cost, and subject to the uncertainties of winter mountain weather.

The distance of this site from any established Engineer installation made a disproportionately large maintenance staff necessary. There were at first no adequate power lines east of the Cascade Range to serve the camp. The firing area was miles away from the main site, with connecting roads that had not been built for heavy military traffic. The lava rock which underlay the shallow soil of the camp made the laying of sewer and water pipes costly and slow. The dryness of the region made clouds of volcanic dust a constant irritant, summer and winter. Drivers of combat vehicles and operators of heavy equipment were forced to wear protective masks.³⁷

Nevertheless, the advantages of the site outweighed its defects. Besson, transferred

³⁵ (1) Ltr, Portland Dist Engr to CofEngrs, 27 Nov 42, sub: Desig of ERTC at Bend, Deschutes County, Ore., as Camp Abbot. 600.05, Bend, Ore. (2) Memo, Somervell for G-4, 8 Jul 41, sub: Site for Antiaircraft Firing Center (18,000 Men), Bend, with Incl, Memo on Engineering Features of Bend-Fort Rock Valley Firing Center, Deschutes and Lake Counties, Ore., 7 Jul 41. QM 685, Camp Abbot (C-ED).

³⁶ (1) Ltr, Adj ERTC Wood to CofEngrs, 31 Dec 42, sub: Proposed Rev of Camp Abbot ERTC Layout. Wood, ERTC Bend, Corresp. (2) Memo, ASF Mil Tng Div for Dir Mil Tng ASF, 5 Oct 43, sub: Inspec of ERTC, Camp Abbot, Ore. 333.1, Inspec, 1 Aug 43-20 Nov 43, CofS Job A 44-21. (3) Ltr, C of O&T Br to CSigO, 13 Feb 43, sub: Request for Recommended Issue of Photo Equip for ERTC, Camp Abbot, Ore. 413.53, ERTC Abbot.

³⁷ (1) Memo and Incl cited n. 35 (2). (2) Ltr, C of O&T Br to C of Sup Div, 16 Jan 43, sub: Authority to Purch for New ERTC, Camp Abbot, Ore., with Incl, Ltr, Adj ERTC Wood to CofEngrs, 22 Dec 42, sub: Authority to Purch Locally—Camp Abbot ERTC. 161.0, ASFTC Abbot. (3) 4th Ind, CO ERTC Abbot at Wood to CG SOS, 2 Mar 43, on Ltr, Besson to TAG, 10 Feb 43, sub: Suballot of Grades and Authorized Strength, Corps of Engrs, CASC, Ninth SvC. 320.22, ASFTC Abbot. (4) Memo, ExO Equip Br for CG ASF, 23 Jul 43, sub: Respirator for Camp Abbot, Ore. 426, ASFTC Abbot.

from Wood to be the first commanding officer of the new center, made a reconnaissance of the site late in February 1943. Apparently satisfied with the camp at that time, he became enthusiastic upon its completion in May. He believed it to be "the best camp in the entire country. The buildings are ideally situated and the facilities will bear small improvement" Camp Abbot was "without a doubt destined to be remarkable as a replacement training center."³⁸

The combination of increased total capacity and lowered requirements allowed the Engineers to plan once more for a longer training period and to discontinue the troublesome five-week battalions, since specialist school quotas would be reduced as well. On 16 July, OCE directed the centers to give all trainees thirteen weeks of training whether they were destined for schools or for general replacement. This was in the nature of a temporary order, pending a decision by the War Department on an even longer cycle including seventeen weeks of actual training time. The latter program was instituted on 15 August, with a transition period lasting through December. Transfers to specialist schools could be made at any time between the sixth and the seventeenth weeks as needed. Engineers at home and overseas welcomed the seventeen-week schedule. The centers wanted a simpler or at least a uniform program and overseas commanders wanted a more thoroughly trained basic replacement.³⁹

Col. Edward H. Coe, who had been head of the Training Section, OCE, reflected somewhat later that "training of specialists was over-emphasized to a fault in training both officers and men. . . . There is a real deficiency in our supply of specialists, but the crying need is and always has been for

the versatile, balanced engineer soldier who can scramble over a bridge, tighten a bolt, set a jack, drive a truck, skin a cat, and shoot a rifle, all in one night shift."⁴⁰ Actually the crying need for the first eighteen months after Pearl Harbor had been for something which could not be secured—time. Under this handicap the training of the engineer soldier was pieced together to meet sudden, unexpected emergencies. It developed from an oversimplified program of basic military instruction to an overcomplicated one dominated by the production of specialists.

The Balanced Engineer Replacement

With supplies and time at last ample and with much experience to draw upon, the quality of ERTC training should have approached the ideal. It did improve, but not to the extent anticipated. After the fall of 1943 man power shortages supplanted equipment shortages in imposing restrictions upon the training program. The lengthened time for training and a better balance of subject matter could not wholly compensate. From August 1943, when the seventeen-week program went into effect, to June 1944, when the replacement system absorbed both replacement and unit training, the three ERTC's produced replacements on a reduced scale, within rigid limits defined by the War Department and by ASF. Although these restrictions grew out of the

³⁸ Ltr, Besson to CofEngrs, 22 May 43. 322, ERTC Abbot.

³⁹ (1) Ltr, TAG to CofEngrs, 19 Jul 43, sub: ASF RTCs. 320.2, RTCs (S). (2) Msgform, OCE to ERTCs Belvoir, Wood, Abbot, 20 Aug 43. 353, ETC Belvoir, Pt. 2; 353, ASFTC Wood; 353, ERTC Abbot.

⁴⁰ Ltr, Coe (341st Engr Regt) to OCE, 27 Feb 45. 353, Engrs Corps of, Remarks on Tng at Engr Installations.

desire at all levels for the most efficient and economic use of the dwindling manpower, the incidental effect upon training standards proved most unfortunate.⁴¹

Emergency peak needs remained unpredictable. The time necessary to induct, train, and move a replacement overseas under a seventeen-week program in a nineteen-week cycle could not have been less than six months—too long to meet an unexpected crisis. In August 1943 ASF devised a plan which would create a reserve of trained men to meet such emergencies and at the same time stabilize administrative work loads and cadres. To each of the services ASF assigned total trainee capacities, breaking these down into monthly inputs. The capacities, including ERTC graduates held over awaiting assignment, could be exceeded only through the rest of 1943, during the gradual transition period between the twelve-week and the seventeen-week programs. The monthly inputs were effective at once and could not be changed. A steady output was mandatory by the end of the year, and desirable before that time.

The Engineers were assigned slightly over 27 percent of the ASF monthly inputs and trainee capacities. The suballotment from OCE reduced capacity at Belvoir from 9,760 to 8,120, Wood from 9,760 to 8,000 (6,000 white and 2,000 Negro), and Abbot from 6,272 to 5,880. The monthly input to Belvoir was set at 1,800, Wood at 1,660 (1,260 white and 400 Negro), and Abbot at 1,240.⁴²

The centers were to lengthen or shorten the programs of the battalions already in training in order to provide as even a monthly output as possible during the transition period, the remaining months of 1943. But the centers found it impossible to level off the output and stay within the author-

ized capacities. There were too many uncontrolled sources feeding into them—over-shipments from reception centers and rejects from OCS, ASTP, and trade schools. Graduates from the ERTC's were at times held for over two weeks before being transferred. Civilian and service school graduates awaiting shipment and physically unfit men awaiting further disposition swelled the totals. Neither capacities nor outputs could be controlled through 1943.

Although the lower input made the battalion setup awkward, it was not quite small enough to warrant a change to reception by companies. To handle the smaller increments, Abbot reorganized in early October 1943 from seven battalions to nine and reduced the number of companies in each battalion from four to three. The Wood center retained the same nine and a half battalions but split the training in four of them, starting part of the companies in these battalions behind the others as necessary. The multiple stages of training resulted in

⁴¹ Unless otherwise noted, this section on the balanced engineer replacement is based upon: (1) 353, ASFTC Wood, 7-12-41-1-3-46 and 5-6-41-12-8-42; (2) 354.1, Engr RTC, Tng Div ASF; (3) Wood, 333.1, Inspec Rpts by Visiting Offs; (4) 333.1, Inspec, 1 Aug 43-20 Nov 43, CofS Job A 44-21; (5) MTP 5-6, 1 Aug 43; (6) 333.1, Rpt of Maj Inspec, ASFTC Belvoir, 1944; (7) Hq MDW, Notes on ASF Tng Conf, Camp Lee, Va., 20 Oct 43, EHD files; (8) 400.34, ERTC, Pt. 1, Corresp; (9) Wood, 333.1, Inspec, Vol. 3; (10) Belvoir, 470, Ammunition, Armament, and Similar Stores, 1943; (11) Belvoir, 354, Camps and Maneuvers, A. P. Hill, 1943; (12) Study, Rotation of Pers, prepared by ExO Dir Mil Tng ASF for Fourth ASF Tng Conf, Ft. Monmouth, N. J., 15-17 Mar 44, P&T Office File, Tng Conf, 15-17 Mar 44, Rotation of Pers; (13) 353.15, ERTC Belvoir; (14) 353.15, ASFTC Wood; (15) 353.15, ASFTC Abbot.

⁴² (1) Ltr, TAG to Cs of Svs, 28 Aug 43, sub: ASF RTCs. 353, ETC Belvoir, Pt. 2. (2) 1st Ind on above ltr, Asst CofEngrs to CGs ERTCs Belvoir, Wood, Abbot, 1 Sep 43. 353, ETC Belvoir, Pt. 2; 320.2, ASFTC Wood; 353, ERTC Abbot.

a much less economical use of cadre and facilities. By late October each of the ERTC specialist courses at Wood had six different stages of training going on at the same time. Belvoir also kept the existing battalion organization but tried not to split training. The Belvoir plan to receive trainees every other week did not coincide with the monthly input schedule. Four times out of a year a longer interval was necessary between trainee shipments. The authorized capacity also had to be exceeded frequently, and a very tight schedule had to be maintained.

Additional complications stemmed from the fact that while the regular trainee increments arrived on a monthly schedule the centers operated on a weekly basis. This lack of co-ordination between planning and training agencies was resolved in January 1944 by a new trainee input schedule based upon thirteen four-week periods each year instead of calendar months. The trainee allotments for each period were scaled downward accordingly. The Belvoir input for each period was set at 1,661, Wood at 1,532 (1,163 white and 369 Negro), and Abbot at 1,144.

This downward revision did not prevent the continued overproduction caused by the irregular number of men received by the centers as casualties. In addition, the centers were responsible after December 1943 for refresher or partial training of men returned from overseas, released from deactivated units, or declared surplus in station complements. The Belvoir center by the end of January 1944 estimated its excess for each four-week period at 200 men.⁴³

With the invasion of Europe imminent, replacement estimates climbed sharply within a few weeks. On 6 March 1944 another revision raised the trainee inputs for

each period and returned the maximum capacities to previous levels at Belvoir and Wood. Abbot remained about the same. The input for each four-week period at both Belvoir and Wood was set at 1,900 (1,300 white and 600 Negro at Wood), Abbot 1,100. The trainee capacity at Belvoir was raised to 9,750, that at Wood to 9,875, while that at Abbot was lowered to 5,775. Although the higher number of trainees at the centers should have simplified the organization once more, it placed an immediate increased load upon reduced cadres. The new figures were as inflexible as before. Apparently the desire for a uniform flow of trainees from induction to replacement outweighed the very real training difficulties which this system imposed.⁴⁴

The program developed for the longer training period in August 1943 struck a balance between the production of specialists and versatile engineer soldiers. "The program provides a uniform amount of military, tactical and technical training during and in addition to the training of the soldier in his specialty," observed Gorlinski. "This training is considered the minimum amount necessary to make an engineer soldier as well as a specialist out of the trainee. It follows recommendations from all theaters of operations which emphasize that, while training

⁴³ (1) Ltr, ERTC Wood to CofEngrs, 1 Oct 43, sub: Maximum Authorized Trainee Capacity, with 2d Ind, AC O&T Br to CG ASF, 11 Oct 43. 320.2, ASFTC Wood. (2) 1st Ind, 5 Nov 43, on Memo, CG Ft. Belvoir for CG ERTC, 29 Oct 43. Belvoir, 337, Confs, 1943. (3) Ltr, CG ERTC Belvoir to CofEngrs, 15 Nov 43, sub: Request for Permission to Exceed Authorized Trainee Capacity. 353, ASFTC Belvoir, Pt. 2. (4) Ltr, TAG to CofEngrs, 4 Jan 44, sub: Intake of Pers at RTCs. 352.15, ERTC, Pt. 1. (5) ASF Cir 172, 31 Dec 43.

⁴⁴ (1) ASF Cir 66, 6 Mar 44. (2) Memo for Record, 15 Mar 44, sub: Reduction in Operating Pers at Ft. Belvoir, Va. P&T Div file, Engr Sch Orgn.



CLASS IN DRAFTING AT A CIVILIAN UNIVERSITY *under the program to train Engineer enlisted specialists, 1942.*

in a specialty is desirable it should not and cannot take the place of a thorough training in military, tactical and technical subjects.”⁴⁵

All battalions which filled after August 1943 began on the revised seventeen-week schedule. Basic military training increased from five to six weeks and basic technical training from seven to eight weeks. Specialists in training at the ERTC's received their instruction after the first six weeks of military training and during the eight weeks in which the rest of the trainees were learning basic engineer tasks. In the last three weeks of the seventeen, all of the trainees were given a period of team training under field conditions.⁴⁶

Since by this time the critical shortage of technicians had been overcome, most of the candidates for specialist schools received

the full seventeen weeks of training. The reduction in the demand for specialists coincided with a similar falling off in requirements for officers from OCS and a consequent opening up of additional facilities for enlisted men at Fort Belvoir. The immediate result was a sharp curtailment in the use of civilian schools and a rise in the number of courses and in the enrollment of enlisted specialist candidates at the Engineer School.

The first cut was in Army Air Forces specialists. Production for the AAF would continue at the rate of 700 per month

⁴⁵ Office Memo, Gorlinski for Sturdevant, 7 Aug 43, sub: Inspec of ERTC, Camp Abbot, Ore. 353, ERTC Abbot.

⁴⁶ (1) MPT 5-6, 1 Aug 43. (2) 4th Ind, Mil Tng Div ASF to TAG, 7 Sep 43, on Ltr, ERTC Belvoir to TAG, 24 Aug 43, sub: Interpretation of Basic Tng. 353, Pt. 23.

through June 1943, ASF's Training Division notified the Engineers, but beginning in July the number would be cut 50 percent. The Engineers hastened to terminate contracts with the two civilian schools which had been training electricians and draftsmen for AAF units, the University of Kentucky and the Virginia State College for Negroes. By the end of the year only four civilian institutions were still serving the Engineers.

Enlisted specialists such as draftsmen, surveyors, and aviation engineer equipment operators, formerly taught by civilian schools, shifted to the Engineer School, and between October 1943 and December 1944 the school graduated a total of 5,568 men. A substantial number of school-trained specialists were also produced at the Granite City Engineer Depot, which gave instruction in the maintenance of mechanical equipment, advanced machine shop practices, welding, and carburetion and ignition.⁴⁷

The ERTC's were allowed considerable freedom to experiment with the allocation of time and the sequence of subjects to be given under the seventeen-week program. A certain amount of confusion resulted from the fact that they had as guides two MTP's, one published by ASF, the other by OCE. Although the OCE program was supposed to incorporate all of the ASF program the two varied, particularly in the spacing of the hours for subjects. The Wood center by January 1944 had settled for its own version of the OCE program. The OCE schedule had been carefully arranged to allow for a more logical sequence of instruction than that of ASF. In some instances ASF had prescribed more instruction than time permitted. Hours for physical conditioning were

badly spaced in relation to some strenuous marches. Transition firing and technique of fire were so scheduled that the trainee would have to be taught combat range firing before having had adequate instruction in range estimation, target designation, landscape firing, or combat principles. Both in total hours and in the division of time the planning of OCE more nearly met engineer training requirements than did that of ASF.⁴⁸

The allocation of hours to the various subjects for the regular engineer replacements as set forth in the MTP published by OCE reflected the change toward realism and the increased emphasis upon physical hardening. (*See Table 6.*) More time was allotted to Engineer subjects. New subjects which appeared for the first time in the published MTP included infiltration, village fighting, hand-to-hand combat, map reading, booby traps, and antipersonnel mines. Thirty-two hours were given to laying mines and gaining passage through mine fields. Night operations increased to a total of fifty-six hours, all of which were in addition to the scheduled forty-eight hours for each week. The hours for hygiene and sanitation were increased to include a more thorough explanation of malaria prevention since by this time many of the major campaigns of the war were being conducted in areas where the control of this disease was of prime importance. An orientation course intended to integrate the trainee more easily into the military system and to keep him in-

⁴⁷ Engr Enl Specs, pp. 15, 16, 48, 91.

⁴⁸ (1) 1st Ind, CG ERTC Wood to CG Seventh SvC, 7 Jan 44 (basic missing). Wood, 353, Tng Gen. (2) Ltr, ExO ERTC Belvoir to CG Ft. Belvoir, 25 Apr 44, sub: Tng—First Corrective Action Rpt. Post Hq, Belvoir, 333.1, Rpt of Maj Insps, ASFTC, 1944.

formed on current developments of the war added seventeen hours to the program.⁴⁹

A part of the enthusiasm for the new program had been based upon the consideration that better basic engineer soldiers would emerge than those so hastily trained in the past. For one thing, the new soldiers should shoot better. There was indeed a steady improvement in marksmanship scores. Monthly qualification reports exceeded the ASF 80 percent mark at all three centers. Belvoir and Abbot, which trained only white troops from August 1943 to June 1944, rarely fell below a 98 or 99 percent rating. Wood trained both white and Negro troops and its average was a few points lower.

Although ammunition and weapons shortages were much less severe after the fall of 1943, there were some exceptions. In an effort to provide engineer units with a more effective defense against aerial attack practically all of these units were issued the .50-caliber machine gun in February 1943, but low training priorities and a meager ammunition allowance had precluded any effective center training in firing the weapon. Additional ranges, more .50-caliber guns, and an increased ammunition allowance improved this situation somewhat by the spring of 1944, although there remained a disproportionate amount of .30-caliber machine gun training.⁵⁰ Flame throwers, which were needed in both demolition specialist training and in the regular program for assault demolitions, continued to be scarce. The allowance of antitank rockets was never raised above one for every fifty men despite the insistence of OCE, after pressure from the centers, that each man should fire at least one rocket for minimum familiarization. As late as October 1943 there was still little prospect of obtaining

sufficient captured enemy equipment. At that time ASF indicated that absolute essentials would be provided when possible on a priority basis by G-3. By March 1944 the enemy mines requisitioned by Wood still had not arrived.⁵¹

With the adoption of the longer program in August 1943, the centers eliminated the twelve-week and five-week battalions and simplified the handling of ERTC specialists. One company from each of the seventeen-week battalions became a specialist company. All of the companies had the same basic military training during the first six weeks. At the end of six weeks the specialist company in each battalion reported to the ERTC specialist courses for the next eight weeks while the rest of the battalion continued the regular program of basic technical work. At the end of the eight weeks of separate work the specialists and the regular trainees were brought back together for the last three weeks of field training.⁵²

The cadre for the specialist company, about 5 officers and 22 enlisted men, remained with the company as assistant instructors during the eight weeks of specialist training. This cadre also conducted what little military and basic technical instruction was given to specialist candidates, 85 hours

⁴⁹ (1) MTP 5-6, 1 Aug 43. (2) Ltr, AC of Office of the Surgeon General to CG ASF, 13 Sep 43, sub: Malaria Control. 353, Engrs, Mil Tng Div ASF.

⁵⁰ Ltr, Adj ERTC Belvoir to CofEngrs, 9 Dec 43, sub: Change to T/A 5-1, with 2d Ind, Adj MDW to CG ASF, 21 Jan 44. 400.34, ERTC, Pt. 2.

⁵¹ (1) Ltr, C of War Plans Div to CGs ERTCs Wood, Belvoir, Abbot, 19 Feb 44, sub: Assault Demolitions. 353, ERTC, Pt. 1. (2) Memo, AC of Equip Br for CG ASF, 1 Sep 43, sub: Captured Enemy Mat for Tng Purposes, with Incls, Lists for ERTCs. 386.3, ERTC.

⁵² 2d Ind, CO ERTC Belvoir to CG Ft. Belvoir, 29 Mar 44, sub: Course of Instr for USMA Grads in 1944 Asgd to Corps of Engrs (basic, 3 Mar 44, missing). 352.11, Engr Sch, Pt. 17, Corresp.

for those platoons in the ASF courses and 120 hours for those in OCE courses. All were required to run the infiltration and village fighting courses and spend a few hours in map reading, mine laying, drills, physical conditioning, and guard duty.

Twenty-five percent of the replacements produced by the three centers between July 1943 and June 1944 qualified as basic specialists. Out of a total of 63,458 trainees who completed ERTC training, over 15,600 were specialists. The Negro battalions, concentrated at Wood, produced one less man each than the white battalions in almost all of the specialties. Accurate selection and assignment of men for specialist training had much to do with the high number of qualifications at the end of the courses. Less than 5 percent of the men sent to specialist companies at Belvoir proved to be misfits.

After fourteen weeks of instruction in basic and ERTC specialist subjects, the trainees learned to operate in units and realized more fully how each would fit as a replacement into a working Engineer organization. But since for many the type of unit used for these exercises was not the type to which they would ultimately belong, this phase was an experience in teamwork rather than in realistic unit training. The trainees lived in the field during this time. Bivouac areas were dispersed and camouflaged, foxholes were dug and occupied during simulated attacks. Shelter halves were the sole protection against the weather. Field kitchens prepared the food. Mine laying, demolitions, bridge, road, and obstacle building were carried out on difficult terrain through rain, snow, and penetrating mountain fog.

Team training required much more space than that needed for the individual instruction given previously. Only the Fort Wood

center had enough land close by. The area used at Abbot was quite far from the cantonment. Belvoir had no such area for miles around. A part of the A. P. Hill Military Reservation to the south of Belvoir was open to the Engineers, but since Quartermaster and Ordnance troops were already in training there the ERTC elected to use a part of the Shenandoah National Park in the vicinity of Luray, Virginia. The Big Meadows site, at an elevation of 3,500 feet, offered a rugged and varied training ground. Construction and repair of roads, trails, and bridges provided valuable experience and the permanent nature of the work gave the trainees a sense of accomplishment. But the use of the area was hedged about with restrictions. Care had to be taken to preserve the natural features of the park, and to avoid damaging individual objects of geological or historical value. Road and bridge construction had to be approved in advance by the park superintendent. Such work was exhausted within a few months and by September 1944, the Belvoir center was compelled to shift this training to the A. P. Hill Military Reservation after all.⁵³

Although the three weeks of team training were authorized on 1 August 1943, several months elapsed before the centers began to produce replacements with such training. The selection of training sites and the procurement of special winter clothing and bedding and minimum unit equipment took time. Trucks, tractors, tents, tools, stoves, air compressors, machine guns, radio sets, mine detectors—practically all of the operational equipment for the field

⁵³ (1) *Belvoir Castle*, 22 Oct 43; 24 Mar 44. (2) Tng of Repls, Annex I. (3) Interv, Col Louis W. Prentiss, 20 Nov 52. (4) Interv, Col Paschal Strong, 28 Nov 52.

units—had to be added to the existing center allowances, which could not be stretched to cover this additional demand. Heavy mittens, wool mufflers, and sleeping bags had to be provided to temper somewhat the abrupt change from the previous fourteen weeks of training while housed in barracks. Wood and Belvoir did not give their first team training until early October and Abbot not until December.⁵⁴

More time and equipment and the introduction of realistic field exercises produced a better qualified basic engineer soldier, but attempts to insure more effective utilization of available manpower gradually came to have a detrimental effect upon replacement training. In addition to the normal reductions in cadre which accompanied the decreased size of the centers during most of this period there were continuous cuts in the suballotments beyond that point. In October 1943 ASF determined that training installations were overstaffed if the officer complement was over 4 percent and the enlisted cadre over 18 percent of the trainee load. Although intended merely as a starting point from which to calculate training needs according to the amount of technical training given at the various centers, the suballotments to the Engineer centers from the service commands soon pointed to this yardstick as an absolute standard of efficiency. Less than a month after these percentages were set down both Wood and Belvoir warned that the quality of training had been impaired as a result of cadre shortages. For months thereafter the Wood ERTC tried without success to get permission from the Seventh Service Command to reorganize into fewer and larger companies in order to have enough cadres for each unit. By the middle of March 1944 Belvoir indicated that inferior training had resulted

from the repeated cuts and that any further cadre decreases would entail reductions in training activities. In line with the general findings of the ASF staff that the smaller centers could be operated more economically than the larger ones, the Abbot center offered little objection to the reductions. A work load study completed by ASF in March 1944 placed the Engineer centers fairly high upon the efficiency list, the Wood center being the only one that was out of line to any extent. Of the sixteen ASF centers, Abbot, Belvoir, and Wood placed fifth, sixth, and eighth, respectively. Although the study indicated that the Wood ERTC was overstaffed, ASF recognized that a proportion of cadre above the yardstick was necessary since most of the instruction of substandard Engineer trainees was done there. The necessity for further reductions at all centers was emphasized.⁵⁵

Such a work load study measured only the numerical proportion of cadre to trainees. It did not take into consideration the changing quality of the instructors at the centers. If an experienced and capable cadre could have been kept throughout this period, a smaller number of people might well have done a comparable job. It was during this same period of reductions, however, that other economy measures for the use of manpower began to drain from the ERTC's the very people who might have been able

⁵⁴ Ltr, ExO ERTC Belvoir to CG MDW, 24 Sep 43, sub: Special Equip for Trps During Unit Tng in Shenandoah National Park. Belvoir, 475, Equip of Trps, 1943.

⁵⁵ (1) Memo, CG Ft. Belvoir for CG ERTC Belvoir, 29 Oct 43, with 1st Ind, 5 Nov 43. Belvoir, 337, Confs, 1943. (2) Tel Conv, Dir Tng Div Seventh SvC to CG ERTC Wood, 5 Feb 44. Wood, 311.3, Summary of Tel Convs, 1944. (3) Work Load Studies, prepared by Office Dir Mil Tng ASF for Fourth ASF Tng Conf, Ft. Monmouth, 15–17 Mar 44. P&T Div file, Tng Conf, 15–17 Mar 44, Overhead—Work Load Studies.

to handle the increased work load. Late in 1943 the War Department became concerned over the number of men qualified for overseas duty who were serving in training positions in the United States. These men should be at the battle fronts. Accordingly on 8 December 1943, ASF directed that qualified officers and enlisted men who had served for eighteen months or longer in training assignments be released as soon as understudies could be prepared for their positions.

An even more stringent rotation policy for enlisted personnel was introduced on 24 January 1944 upon the orders of Lt. Gen. Joseph T. McNarney, Deputy Chief of Staff. Physically qualified men under thirty-five years of age who had been in the Army for a year without overseas duty had to be reassigned by 30 June 1944 to units slated for overseas movement. These enlisted trainers or other overhead personnel were to be replaced by men over thirty-five, the physically handicapped, those with less than twelve months service, returned veterans, and wherever feasible by Wacs and civilians.⁵⁶ Few positions at replacement centers could be filled by Wacs or civilians. The physical toughening which had been introduced into all phases of the training program required physically fit trainers and made the selection and use of physically handicapped and older men a difficult matter. Brig. Gen. Creswell Garlington, commander of the Wood center, warned that "the men (and officers for that matter) who participate personally with the trainees in the training program, must be men of great stamina and a high degree of physical fitness. If they are not, we will not be able to maintain the training standards set for us by the ASF itself."⁵⁷ Men with less than twelve months service were inadequate sub-

stitutes for men who had been in the Army for several years. The obvious answer was more veterans. One of the avowed aims of the rotation system was to channel a substantial number of men with combat experience into training positions. Unfortunately, combat experience alone had little to do with a man's ability to instruct others, and men of recognized teaching ability could not be requisitioned from overseas. Selections had to be made from those sent back through the normal operation of the rotation system, and many were not desirable cadre material. Shortly after the new policy went into effect Garlington observed that "the majority of replacements from overseas received to date have been either physically, mentally, or emotionally unfit to stand the rigors of the training program."⁵⁸ The Military Personnel Branch of OCE agreed that few officers returned through rotation were qualified for assignments in training staffs.⁵⁹ In the opinion of Col. Louis W. Prentiss, executive officer for the Military Training Division of ASF and formerly executive officer of the ERTC at Belvoir, the explanation for this was simple:

The dribblets which have been coming back up to now have not given any promise of being good trainer material for the reason that there has been a tendency upon the part of the theater commanders to send back many of the border-line cases, which they could get rid of through no other means. The reaction in the theaters to such tactics has been as might be expected; the men, learning that they could return to the United States only by doing an indifferent job, began to do an indifferent job, and the theater commander,

⁵⁶ ASF Cir 143, 8 Dec 43, and 26, 24 Jan 44.

⁵⁷ Ltr, CG ERTC Wood to CG Seventh SvC, 2 Feb 44. Wood, 312, Gen Garlington's Corresp file.

⁵⁸ *Ibid.*

⁵⁹ Rpts, Mil Pers Br, 15 Jan 44; 15 Feb 44. 020, Engrs Office C of, Pt. 14.

performer, had to revise the standard for those eligible for rotation. Consequently we expect to see better material coming back in the future.⁶⁰

The Engineers were not required to give up all their experienced instructors. On 25 February 1944 ASF exempted from immediate reassignment those instructors whose duties were of a highly technical nature and for whom there were no adequate replacements.⁶¹ As a result, the quality of Engineer technical training showed less deterioration than did basic military training. By the spring of 1944 basic military training at both Belvoir and Wood was badly disorganized. Inspection teams reported inadequate supervision, lack of correlation of subject matter, wasted time, poorly handled equipment, and slavish dependence upon the letter of the lesson plans. The quality of basic military training at Belvoir had deteriorated below the standards of comparable training establishments and that at Wood was unsatisfactory. The quality of the cadre at Belvoir was so poor that the total number of training hours had to be cut back in order to give the cadre more time for preparation. The same reasoning which delegated nonstandard equipment to the centers during the period of matériel shortages operated during the period of personnel shortages to reduce the number of capable and experienced instructors. Personnel restrictions had brought about a curious paradox. The quality of basic instruction declined during a period in which all phases of training should have improved.

The training of engineer replacements under ideal conditions was first prevented by limitations of time, then by the allocation of used equipment to the centers, then by administrative restrictions and personnel shortages. That overseas theaters had first

call upon the experienced and the skilled and upon the best in equipment there can be no doubt. But those who believed that training centers staffed with inexperienced instructors and nonstandard equipment could supply men who would run this equipment efficiently were fooling themselves. Standard arms and equipment might well have repaid several times over in increased operating efficiency, less deadlining of machinery, and decreased maintenance. An adequate and early rotation system could have maintained both combat proficiency and training efficiency. Planners showed scant realization of or regard for the degree of disruption which resulted from what were undoubtedly considered minor changes or restrictions. Lack of co-ordination among the agencies responsible for training created unnecessary confusion. Although training doctrine was developed by the Chief of Engineers, the conduct of training of all ASF replacement centers, including the ERTC's, became the responsibility of the service commands, and in the case of Belvoir, the Military District of Washington. Different interpretations by these three commands could disrupt the uniformity of training desired by all. But such conditions were only additional manifestations of the basic War Department attitude which mistakenly relegated replacement training to a relatively unimportant place as revealed by the low priorities and lack of a definite program to provide adequate instructors.

With the exception of basic training the over-all quality of engineer replacements showed steady improvement. Facilities were gradually expanded; equipment increased.

⁶⁰ Study, Rotation of Pers, prepared by ExO Dir Mil Tng ASF for Fourth ASF Tng Conf, Ft. Monmouth, 15-17 Mar 44. P&T Div file, Tng Conf, 15-17 Mar 44, Rotation of Pers.

⁶¹ ASF Cir 58, 25 Feb 44.

Each center showed remarkable ingenuity in developing its own training aids and making the best use of materials at hand. The introduction of more realistic instruction provided the trainee with more useful information as well as a better physical and psychological preparation for his immediate future environment, improving his chances for survival and the performance of his mission. The production of specialists multiplied. Between May 1941 and June 1944 the ERTC's produced some 40,874 specialists out of a total of 216,662 men. The longer training time produced such a superior nonspecialist engineer replacement

that he was given a special SSN designation so that he would not be confused with the basics from other branches, many of whom received only six weeks of training. From a preponderance of common military subjects, course content shifted until a balance was struck between instruction common to every enlisted man and the infusion of technical knowledge which was the distinguishing mark of the engineer soldier.⁶²

⁶² (1) Interoffice Memo, Asst Dir Pers Div ERTC Wood for Dir Pers Div ERTC Wood, 24 Feb 44. 353, ASFTCs. (2) Memo, ExO Mil Tng Div ASF for Cs of Svs, 15 Apr 44, sub: Rev Loss Repl Rqmts for Jul to Dec 44, with Incl, Repl Rqmts, Engrs. 320.2, File 2 (S).